

Work Order ID: 56969

March 16, 2010 8:40:06 AM



Page 1

Item ID: D119-646-143

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: *W*

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3905

B

D3905-043,-11

B

IIN-D119-646

B

100

0.00



DC

Document Control

Memo

Photocopy bluefile & type labels per PPP D119-646-143
CHG 001

0.00

110

0.00



Skidtubes

Skidtubes

Memo

1- Inspect Mat'l D2500-I-190 for damage

2- Ensure squareness of ends

0.00

[Signature]

10-3-16

N/A *[Signature]*

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Item ID: D119-646-143

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Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00	DP 10-3-16						
130 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							
150 Skidtubes Skidtubes	 Memo 1- Install drill jig DT9480 drill all x-bolt spacer holes using 3/16 drill 2- Scribe batch # inside aft end of tube	0.00 0.00	DP 10-3-16						

1 # 10/3/16

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Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: Date: Tooling: Date:

Stop



QC: Date: SPC (Y/N): Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

155

0.00



CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1- Bend AFT end of tube using CNC Bender 1 and bend prog. D3905 AFT as per dwg D3905. Must use bending Aid DT9538, located 23.25" from Aft end.

2- Esure bending Aid DT9538 is positioned correctly, that the bender set up in on full wide and that the indexing ridge is covered with graphite grease.



10-3-17

165

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

h25.250"

Sub 6/14



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Start Date: 3/16/10 Start Qty: 1.00



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Customer:

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Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

0.00



Skidtubes

Memo

0.00

Skidtubes

1- Veriffy dimation of bend as per dwg D3905

2- Buff out marks left from bending.

3- Drill Aft Float bag holes using DT9493 as per dwg D3905 detail G and section F-F, open to finished size

Spot Face Mast Fwd, Top Facing w complete hole to 0.5625 to accommodate insert. (1 per side)

4- Drill Aft wearplate and wearpad holes using DT9546 and DT9545 as per dwg D3905 detail G open to finished size

5- Open x-bolt spacer holes to finished size as per dwg (sections D-D and E-E)

DO NOT OPEN FWD SADDLE HOLES

6- Drill wearplate holes using DT9546, open to finished size as per dwg D3905

7- Deburr, blow out chips from inside of tube

8- Bond web in place as per Dwg D3905 & QSI 015.

A/R ☐ Sikaflex-291 ☐ *M112429* ☐

Sikaflex expire date: *10-8-30*

Start: ☐ *11:20 AM*

Time: ☐ *10/04/05*

Finish: ☐ *3:30 PM*

Time: ☐ *3:30 PM*

***** (Adhere for 12 hours) *****



10-3-31

DP 10-3-31

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Item ID: D119-646-143

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Setup Start



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Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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190

QC5- Inspect part completeness to step on W/O

0.00

Subtotal



QC

Memo

0.00

Quality Control



200

0.00



CNC Bend I

Memo

0.00

CNC Delta 100 Bender

1- Bend Fwd end of tube using bender I and bend prog. D3905 Fwd.Use bending aid DT9544 ensure proper positioning

2- Cut Fwd end of tube as per dwg.

VERIFY MEASURMENT BEFORE CUTTING

DP 10-4-5

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Item ID: D119-646-143

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Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Stop



Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

210

0.00



Skidtubes

Skidtubes

Memo

0.00

- 1- Buff out marks left from bending
- 2- Drill Fwd cap holes using DT8215. Open Fwd and Aft cap holes to 0.208"
- 3- Open Fwd saddle holes to finished size as per dwg
- 4- Drill Fwd x-bolt hole and open to finished size. (Holes must be laid out manually)
- 5- Drill towing hole and open to finished size. (Holes must be laid out manually)
- 6- Open Aft float holes 0.291" as per dwg D3905 detail G and section F-F
- 7- Deburr, blow out chips from inside of tube.

DP 10-4-5

DP 10-4-19

10-04-19

Drill w cap hole holes using DT 9613 open holes to 0.297.

220

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/10/19

(7)

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Accept



Setup Start



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Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Stop



Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

224

0.00



Skidtubes

Memo

0.00

Skidtubes

1- Countersink x-bolt holes as per dwg

2- Remove alodine prepare for welding

3- Insert x-bolt spacers

4- Weld x-bolt spacer as per dwg

A/R Alum rod Batch: M112860

5- Grind welds flush as per dwg

6- Counter bore x-bolt holes as per dwg

7- Deburr

3 BE 19/05/03

225

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Substoy

Ⓟ

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Item ID: D119-646-143

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Setup Start



Revision ID:

Stop



Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

226

QC10- Inspect visual per QSI004- ground welds

0.00

8/10/05/04



QC

Memo

0.00

Quality Control

227

Pressure Wash per QSI005 4.3

0.00

RE-ALODINED (PAR 09-013)



HandFinish

Memo

0.00

Hand Finishing

0 BR 10-5-5

240

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

M 114207 START: 1:00pm



Powdercoat

Memo

0.00

Powder Coating

Temp: 320°F

FIN: 1:30pm

7/11

10/05/05

1 0

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Start Date: 3/16/10 Start Qty: 1.00



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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

245

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

=> m, l 10/05/06



Quality Control

250

Memo

0.00



HandFinish

Memo

0.00

=> m, l 10/05/06



Hand Finishing

1-Install inserts as per Dwg D3905.

260

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

ala 8

Quality Control

Work Order ID 56969

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Item ID: D119-646-143

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Setup Start



Revision ID:

Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Stop



Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

270

0.00



HandFinish

Hand Finishing

Memo

0.00

1-Install wearpads, gaskets and wearplates as per Dwg D3905. Put sikaflex in insert before installing bolts and washers

A/R ☐ Sikaflex-240/-291 ☐

Sikaflex expire date: ☐

M112429

10/08

O-Ring Lub Batch: M114189

2- install plugs assembly as per dwg.

3 -Inspect for foreign objects as per QSI 024

4 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R ☐ Sikaflex-240/-291 ☐

Sikaflex expire date: ☐

M112429

10/08

280



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

N/A

10.05.06

Handwritten notes and signatures:

- Circle around "LK"
- Signature: m.k
- Date: 10/05/06

Work Order ID 56969

March 16, 2010 8:40:33 AM



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Item ID: D119-646-143

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

285

Wing Walk as per dwg QSI005 4.4 Batch

M113845

0.00



HandFinish

Memo

0.00

Hand Finishing

m-k 10/05/06



286.1

QCS

S. Walter

286.1

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control



290

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

PAP 50739.00

Packaging

C. 10/14

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Item ID: D119-646-143

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/23/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

300

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/05/19 *[Signature]*
MF

10-5-19

Picklist Print

March 16, 2010 8:39:43 AM

Page 1

Work Order ID: 56969

Parent Item: D119-646-143

Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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D2500-1-190



Ext'n - I' Beam Tube 4"

Manufactured No

110

Each

75.0000

1.0000



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

52319

Main Warehouse

ST

46468

72

72

3

3

170

Each

12.0000

1.0000



D3885-3



Standard Web

Manufactured No

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

51844

52425

12

1

11

190

Each

40.0000

12.0000



D3903-1



Spacer

Manufactured No

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST095

47476

51849

40

10

30

12 BE 10/05/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 16, 2010 8:39:44 AM

Work Order ID: 56969



Parent Item: D119-646-143



Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3681-1		Manufactured	No			190	Each	9.0000	8.0000			
Spacer												

Warehouse

Location

Main Warehouse

LG

51920

52898

Main Warehouse

ST

47123

Loc Qty

3

3

7

5

2

2

2

Loc Code

56802

57656

2
6

3 BE 10/05/03

D3683-3



Insert

Purchased

No

250

Each

599.0000

12.0000



Warehouse

Location

Main Warehouse

ST078

47805

Loc Qty

599

599

Loc Code

12 x

m-h
10/05/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Start Date: 3/16/10

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Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

ALS4-1032-130 Purchased No 250 Each 666.0000 42.0000



Insert

Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse	M 114407	
ST282	666	
110511	666	

42x M-k
10/06/06

D2855-3 Manufactured No 270 Each 11.0000 2.0000



Cap

Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse		
fp5	11	
52281	11	

2x M-k
10/06/06

D3672-1 Manufactured No 270 Each 1,597.000 4.0000



Phenolic Washer

Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse		
ST077	1597	
39275	19	
42329	2	
47628	76	
51674	500	
52505	1000	

4x M-k
10/06/06

March 16, 2010 8:39:44 AM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 56969

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Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads


Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00


Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3846-1  GASKET		Manufactured	No			270	Each	49.0000	1.0000			

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST236B	49	
47806	11	
51827 ✓	6	
53735	32	

10/05/06

IX m-h

D3846-11  GASKET		Manufactured	No			270	Each	27.0000	1.0000			
---	--	--------------	----	--	--	-----	------	---------	--------	--	--	--

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FP	16	
51833 ✓	16	
Main Warehouse		
ST	11	
47807	11	

10/05/06

IX m-h

March 16, 2010 8:39:44 AM

Shop Packet Print

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 16, 2010 8:39:45 AM

Work Order ID: 56969

Parent Item: D119-646-143

Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads



Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00



Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3847-1		Manufactured	No			270	Each	35.0000	8.0000			
												
WEARPAD												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 35
47808 4
51823 ✓ 31

D3847-11		Manufactured	No			270	Each	17.0000	1.0000			
												
WEARPAD												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

FP 15
51824 ✓ 15

Main Warehouse

ST 2
47809 2

8 X m-h 10/05/06

12 m-h 10/05/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 56969



Parent Item: D119-646-143



Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3672-3		Manufactured	No			270	Each	492.0000	12.0000			
Phenolic Washer												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST077

492

51596

1

55560

491

AN3CSA

Purchased

No

270

Each

535.0000

46.0000



Bolt

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST351

535

111424

8

111707

69

112314

1

113121

37

113149

20

114056

200

114108

100

114181

100

M114330

~~12X~~ m-l
10/06/06

46X m-l
10/06/06

March 16, 2010 8:39:45 AM

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Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 16, 2010 8:39:47 AM

Work Order ID: 56969

Parent Item: D119-646-143

Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN960C10L		Purchased	No			270	Each	388.0000	46.0000			
-----------	--	-----------	----	--	--	-----	------	----------	---------	--	--	--


washer

NAS1149C0332R

M114341



46x m-l
10/05/06

Warehouse
Location

Loc Qty

Loc Code

OFFSHORE

FG

100

103585

100

Main Warehouse

ST

288

112116

128

112612

160

AN960C416

Purchased

No

270

Each

473.0000

12.0000



washer

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST346

473

100993 ✓

473

12x m-l
10/05/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 16, 2010 8:39:47 AM

Work Order ID: 56969



Parent Item: D119-646-143



Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS27039C4-08		Purchased	No			270	Each	65.0000	12.0000			
SCREW												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST293

65

17831 ✓

65

D3492-045

Manufactured No

270

Each

66.0000

16.0000



Plug Assembly



Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST

66

51638 ✓

66

M-L
12x 10/05/06

M-L
16x 10/05/06

NAS 1611-005

10.05.06

Batch: M1060 99

M-L 10/05/06 *

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 9

March 16, 2010 8:40:00 AM

Work Order ID: 56969



Parent Item: D119-646-143



Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3847-043		Manufactured	No			270	Each	10.0000	1.0000			
FWD WEARPLATE ASSY, STD/ FLOAT GEAR												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP

4

52533

4

Main Warehouse

ST179

6

48180

1

51820

5

D3847-045

Manufactured No

270

Each

11.0000

1.0000



CENTER WEARPLATE ASSY, STD/FLOAT

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST497A

11

48181

1

51821

6

52534

4

10/05/06

1X m-1

10/05/06

1X m-1

March 16, 2010 8:40:00 AM

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Page 9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 10

March 16, 2010 8:40:00 AM

Work Order ID: 56969



Parent Item: D119-646-143



Parent Item Name: Replacement Float Skidtube w/ Full Length Wearplates & Wearpads

Start Date: 3/16/10

Required Date: 3/23/10

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3847-049		Manufactured	No			270	Each	6.0000	1.0000			
AFT WEARPLATE ASSY, FLOAT GEAR												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST179	6	
51822 ✓	6	

1X M-1
10/05/06

March 16, 2010 8:40:00 AM

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Page 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

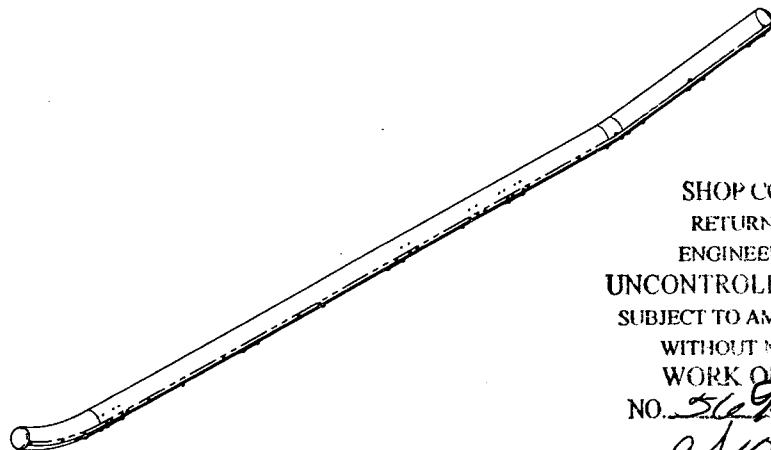
NOTE: Date & initial all entries



The value adding parts of the process are obvious, so companies mistakenly focus on trying to make them go faster. The waste is not obvious, so it is not addressed. Lean focuses on eliminating the waste.

Lean is ongoing, there is no end to the search for

✓ waste!



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *56969 U*
PJ10-3-05

D3905-041 FLOAT SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3905-043 FLOAT SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

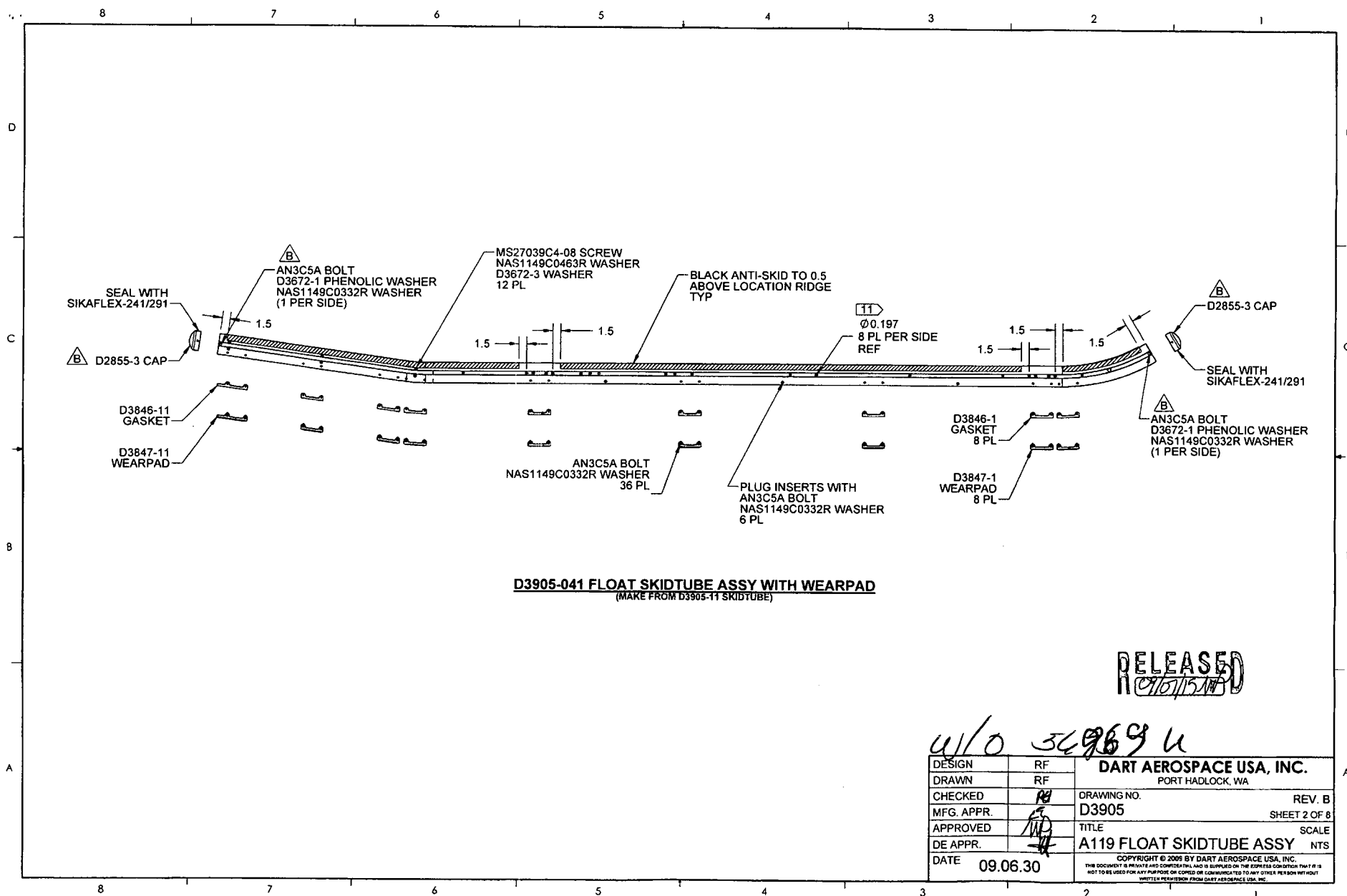
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-3 FLOAT WEB
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3905-041 = 40.7 lbs
D3905-043 = 47.0 lbs
D3905-045 = 47.3 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES
ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT
PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT
PORTION OF THE TUBE.
- 10) INSERT D3885-3 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE
WITH SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8932 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS.
INSTALL AELS-1032-130 INTO D3905-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS
WITH SIKAFLEX-241/291.

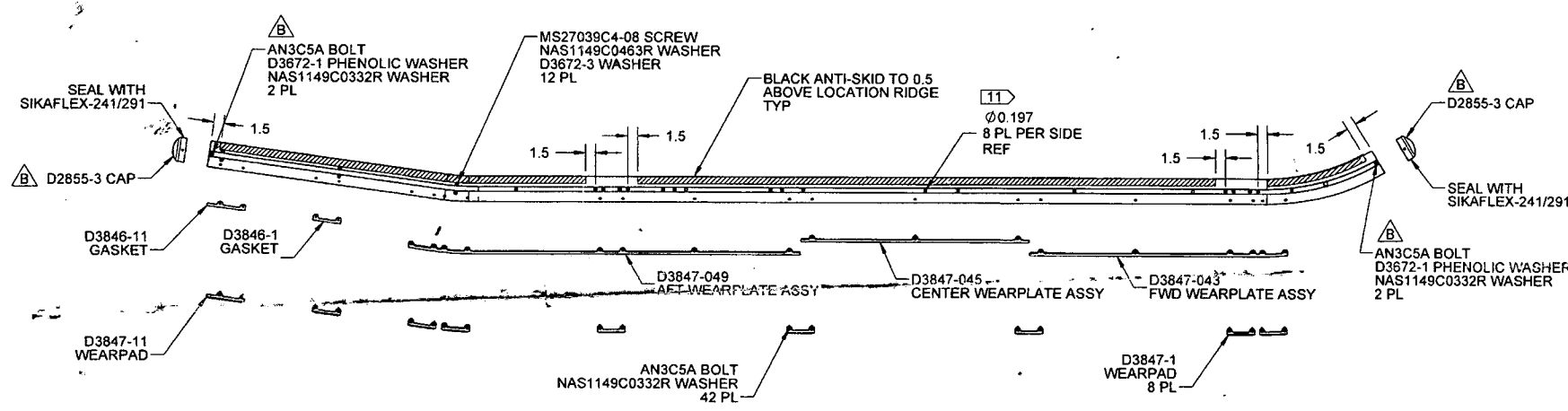
ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3905-041	FLOAT SKIDTUBE ASSY WITH WEARPAD
2		X		D3905-043	FLOAT SKIDTUBE ASSY WITH WEARPLATE
3			X	D3905-045	FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE
11	2	2	2	D2855-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	4	4	4	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
15	8	1	1	D3846-1	GASKET
16	1	1	1	D3846-11	GASKET
17	8	8	1	D3847-1	WEARPAD
18	1	1	1	D3847-11	WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEARPLATE ASSY
21		1		D3847-049	AFT WEARPLATE ASSY
22			1	D3849-047	FWD WEARPLATE ASSY
23			1	D3849-045	AFT WEARPLATE ASSY
24	1	1	1	D3885-3	FLOAT WEB
25	1	1		D3905-11	FLOAT SKIDTUBE
26			1	D3905-13	FLOAT SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
29	12	12	12	D3672-3	WASHER
30	12	12	12	D3683-3	INSERT
31			16	D3411-3	WASHER
41	42	42	10	ALS4-1032-130	INSERT
42	46	46	14	AN3C5A	BOLT
43			4	AN3C48A	BOLT
44			4	AN3C50A	BOLT
45	46	46	10	NAS1149C0332R	WASHER (OR AN960C10L)
46	12	12	12	NAS1149C0463R	WASHER (OR AN960C416)
47			8	MS21043-3	NUT
48	12	12	12	MS27039C4-08	SCREW

RELEASED
09/06/15

B	REVISED PART LIST, ALS4-1032-130 WAS AELS-1032-130 (ZN A6-5, A5-6, C5-7, C3-7, A5-7); ADD DT8932 (ZN A8-1); D2855-3 WAS D2575 (ZN C8-2, C1-2, C8-3, C1-3, C8-4, C1-4); AN3C5A WAS AN3C4A (ZN C7-2, C1-2, C7-3, C1-3, C7-4, C1-4); D3849-047 WAS D3849-041 (ZN B3-4); ADD D3411-3 (ZN B3-4); ADD AN3C50A (ZN B3-4); Ø0.313 WAS Ø0.328 (B2-5, B2-6, C2-7, A8-7 & D7-8); REVISED NOTE iv (ZN A8-7)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	<i>RF</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>RF</i>	D3905	SHEET 1 OF 8
APPROVED	<i>RF</i>	TITLE	SCALE
DE APPR.	<i>RF</i>	A119 FLOAT SKIDTUBE ASSY	NTS
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7.28



D3905-043 FLOAT SKIDTUBE ASSY WITH WEARPLATE
(MAKE FROM D3905-11 SKIDTUBE)

RELEASED
29/07/19/14

w/o 549894

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SEAL WITH
SIKAFLEX-241/291

△ B
D2855-3 CAP

D3846-11 GASKET

D3847-11
WEARPAD

AN3C5A BOLT
NAS1149C0332R WASHER
10 PL

△ B
AN3C5A BOLT
D3672-1 PHENOLIC WASHER
NAS1149C0332R WASHER
(1 PER SIDE)

D3846-1
GASKET

D3847-1
WEARPAD

MS27039C4-08 SCREW
NAS1149C0463R WASHER
D3672-3 WASHER
12 PL

D3849-045
AFT TRAINING WEARPLATE ASSY

AN3C46A BOLT
D3904-1 WASHER, 2 PL
MS21043-3 NUT
4 PL

BLACK ANTI-SKID TO 0.5
ABOVE LOCATION RIDGE
TYP

△ B
D3849-047
FWD TRAINING WEARPLATE ASSY

△ B
AN3C50A BOLT
D3904-1 WASHER, 2 PL
D3411-3 WASHER, 4 PL
MS21043-3 NUT
4 PL

△ B
D2855-3 CAP
SEAL WITH
SIKAFLEX-241/291

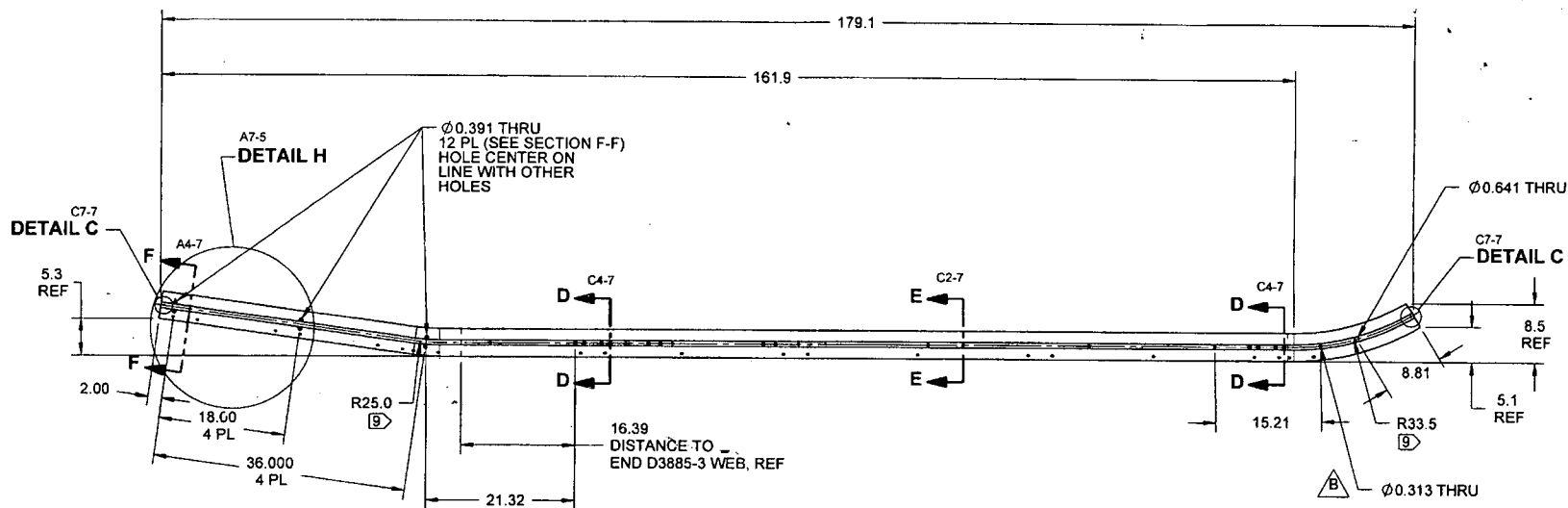
△ B
AN3C5A BOLT
D3672-1 PHENOLIC WASHER
NAS1149C0332R WASHER
2 PL

D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE
(MAKE FROM D3905-13 SKIDTUBE)

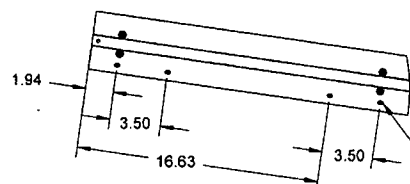
RELEASED
09/07/15 MB

W/0 56989 u

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MFG. APPR.	RF	D3905	SHEET 4 OF 8
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D3905-11 FLOAT SKIDTUBE
(MAKE FROM D3905-1 TUBE)



DETAIL H
SCALE 2X C7-5

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09/07/15

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MFG. APPR.	ES	D3905	SHEET 5 OF 8
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DETAIL G

DETAIL C

5.3
REF

2.00

DETAIL G
SCALE 2X

C8-6

Ø0.391 THRU
12 PL (SEE SECTION F-F)
HOLE CENTER ON
LINE WITH OTHER
HOLES

R25.0

36.00
4 PL

18.00
4 PL

DETAIL G
SCALE 2X

C8-6

DRILL Ø0.297
INSTALL ALS4-1032-130 INSERT
AFTER FINISH, SEE SECTION F-F
TYP, 2 PL

D3905-13 FLOAT SKIDTUBE
(MAKE FROM D3905-1 TUBE)

C4-7

D

D

16.39
DISTANCE TO
END D3885-3 WEB, REF

21.32

C2-7

E

E

C4-7

D

D

15.21

Ø0.641 THRU

C7-7
DETAIL C

8.5
REF

8.81

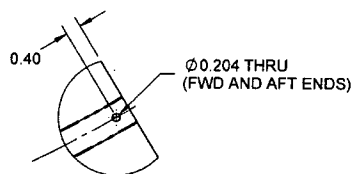
5.1
REF

R33.5

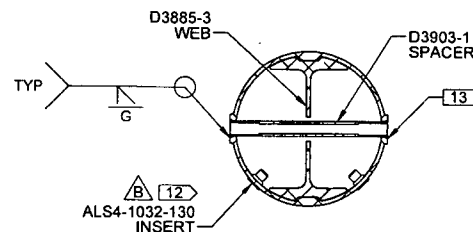
Ø0.313 THRU

RELEASED
9/6/15

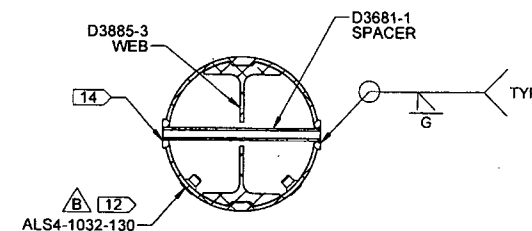
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MFG. APPR.	RF	D3905	SHEET 6 OF 8
APPROVED	RF	TITLE	SCALE
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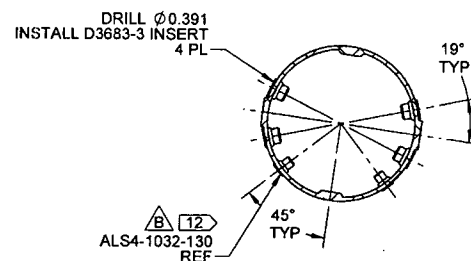
DETAIL C
SCALE 4X
C1-5
C8-5
C8-6
C1-6



SECTION D-D
SCALE 4X
C5-5
C2-5
C5-6
C2-6
(FOR 12 x $\phi 0.375$ HOLES
PER SKIDTUBE)



SECTION E-E
SCALE 4X
C4-5
C4-6
(FOR 8 x $\phi 0.313$ HOLES
PER SKIDTUBE)



SECTION F-F
SCALE 4X
C7-6
C7-5

NOTES:

13) AFTER DRILLING AND BENDING ASSEMBLY

PERFORM THE FOLLOWING FOR $\phi 0.375$ HOLES ONLY:

i) CHAMFER HOLES $\phi 0.475 \times 45^\circ$ (BOTH SIDES)

ii) INSERT D3903-1 SPACER

iii) WELD INTO PLACE AND GRIND FLUSH

iv) C'BORE TO 0.313×0.75 DEEP

v) DEBURR HOLES

14) AFTER DRILLING AND BENDING ASSEMBLY

PERFORM THE FOLLOWING FOR $\phi 0.313$ HOLES ONLY:

vi) CHAMFER HOLES $\phi 0.354 \times 45^\circ$ OR 0.050 DEEP $\times 45^\circ$ (BOTH SIDES)

vii) INSERT D3681-1 SPACER

viii) WELD INTO PLACE AND GRIND FLUSH

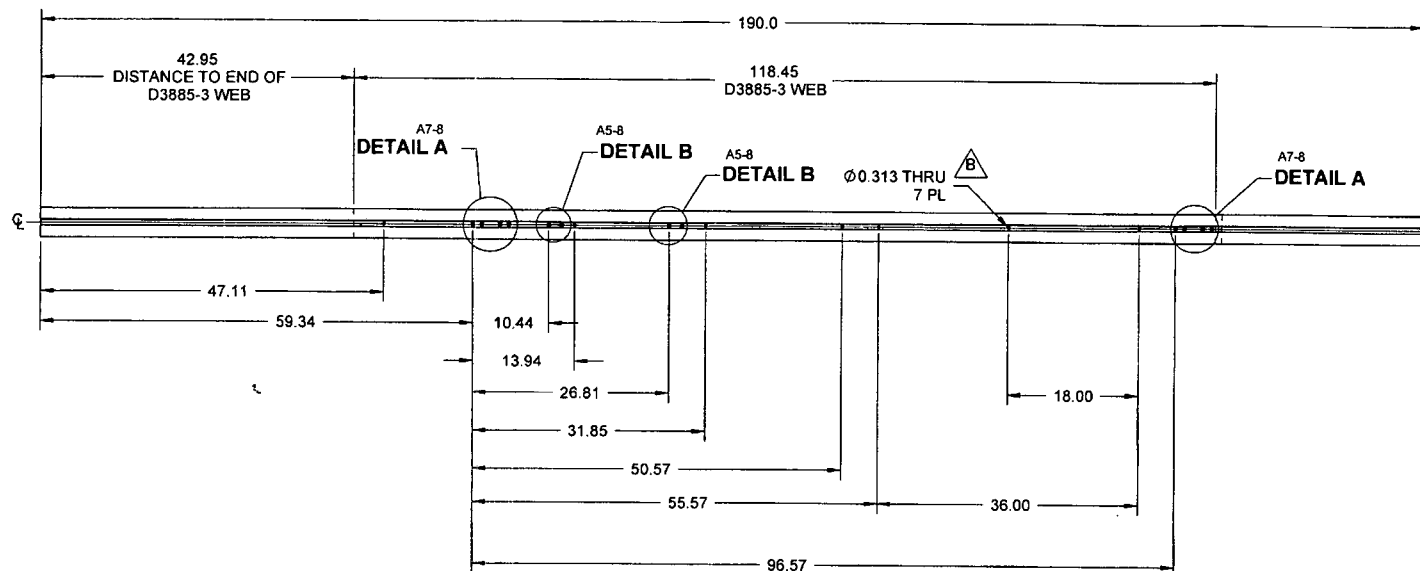
ix) DEBURR HOLES

RELEASED
09/07/15

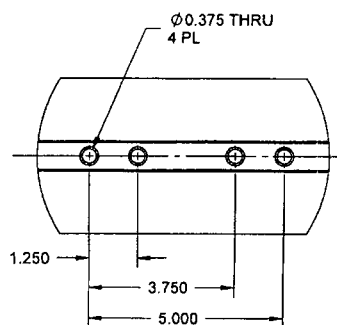
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	RF	DRAWING NO. D3905	REV. B
MFG. APPR.	RF	SHEET 7 OF 8	
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	A119 FLOAT SKIDTUBE ASSY	
DATE	09.06.30	NTS	

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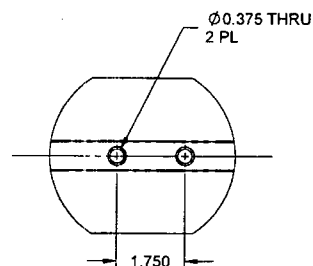
25.73



D3905-1 TUBE
(MAKE FROM D2500-1-190 EXTRUSION)



DETAIL A
SCALE 4X
D6-8
D2-8



DETAIL B
SCALE 4X
D5-8
D4-8

RELEASED
09/07/15/10

W/L 549694

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	RF	DRAWING NO. D3905	REV. B
MFG. APPR.	RF	SHEET 8 OF 8	
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	A119 FLOAT SKIDTUBE ASSY	
DATE	09.06.30	NTS	

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NO. 217

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 52996
Part number: D119-646-243
Description: 119 skid tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminium
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat. Dymally Date of Test Coupon 09.11.16
Welder Barclay Elliott Date of Test Coupon 09.11.16

The above named individual is qualified in accordance with AWS D17.1.2001 to weld